

(Not for Publication)

July 1970

DESCRIPTION OF THE MOUNTAIN
PINE BEETLE PROBLEM ON THE CLEARWATER
NATIONAL FOREST, IDAHO

U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE
Division of State and Private Forestry
Region 1

Missoula, Montana

5280

DESCRIPTION OF THE MOUNTAIN
PINE BEETLE PROBLEM ON THE CLEARWATER
NATIONAL FOREST, IDAHO

by

Scott Tunnock, Entomologist
Forest Pest Control Branch

The mountain pine beetle, Dendroctonus ponderosae, was first reported on the Clearwater National Forest in 1929. Surveys to assess damage have been made periodically since 1934.

By 1938 the annual loss of timber in the drainages between Washington Creek and Sheep Mountain on the Canyon District averaged about one tree per acre. In 1939, 3,000 infested trees were felled and burned on 5,000 acres in this area. This treatment reduced the infestation by 50 percent for that season, but by 1942 from 3,000 to 4,000 trees were again being killed annually. Timber sales followed and parts of the area were logged.

During the next two decades, periodic surveys were made in the Sheep Mountain block and the nearby drainages of Skull and Quartz were sometimes included. The infestation killed from .5 to 5 percent of the white pine stand annually during this period. In a few instances, some drainages had a 7 percent loss in a single year. The average annual loss was about 2.5 percent of the mature trees.

In 1940 and 1941 a study was made to determine the susceptibility of western white pine stands to mountain pine beetle attack.^{1/} Data presented graphically in figure 1 are from this study and represent the results from 1,003 1/5-acre sample plots. The plots were taken in white pine stands of various age and site classes in the Kootenai, Kaniksu, Coeur d'Alene, and Clearwater National Forests. These data are representative of white pine types in general; there are local variations.

Tree killing by the beetle usually becomes noticeable in the 70- to 80-year age class. Losses increase through the 120-year age mark, appear to decrease somewhat, then increase again in the older age groups (fig. 1). There are fluctuations in the infestations from year to year, but the beetle activity never seems to die out nor become catastrophically epidemic. It is a chronic condition that depletes the white pine stands over the years.

^{1/} Evenden, James C., Tom T. Terrell, Susceptibility of white pine stands to infestations of the mountain pine beetle. Progress Report, unpublished, filed at Forestry Sciences Laboratory, Intermountain Forest and Range Experiment Station, Missoula, Montana.

In 1958, comprehensive surveys of white pine stands, in the Canyon and Bungalow Districts, showed an overall tree mortality of 1.9 percent for that year--some "hot spots" ranged up to 10 percent.

In 1961, 41,800 acres were surveyed to determine the status of the mountain pine beetle infestation. The area was divided into six survey units, separated by topographical features. Each unit was sampled by recording white pine trees killed by beetles in 1960 and 1961, and living white pine 8 or more inches in diameter on 1/10-acre line plots. The plots were spaced at 2-chain intervals on lines run 20 chains apart.

Results showed 18,450 white pine trees were killed in 1960 and 15,900 in 1961. The percentage of trees killed on the 41,800 acres was 2.2 percent in 1960 and 1.9 percent in 1961.

Trees attacked by the mountain pine beetle in these units are slightly larger than average for the stand. Their average volume is estimated at from 800 to 900 board feet per tree. Volume lost in these units was, therefore, about 15 million board feet in 1960 and 13 million in 1961. This is probably representative of the average annual loss for the past 25 years.

Not all of this loss was caused by beetles; blister rust, windthrow, and snowbreak killed some of the trees but beetles killed most of them.

A survey of mountain pine beetle damage in 1969 showed about 3.8 percent of the mature white pine in upper Collins Creek were killed. Data on blister rust, taken during this survey, indicated almost three-quarters of the remaining white pines were lethally infected, with better than one-half already spike-topped.

Continued tree mortality from the mountain pine beetle can be expected, and will probably increase as stands age, especially on south-facing slopes.

Direct chemical control measures are not recommended to reduce mountain pine beetle losses in these mature white pine stands.

Logging-for-control--cutting the poorer site areas first, is recommended. Logging should start as soon as possible. Forest personnel indicate stands in some areas are becoming so depleted that their merchantable value will be questionable within a very few years. Since mature and overmature trees are most susceptible to beetle attack, every effort should be made to increase the cut of large trees in accessible areas.

The enclosed maps show the proposed areas to be surveyed for mountain pine beetle and blister rust damage in 1970 on the Kelly Creek, Bungalow, and Canyon Districts, Clearwater National Forest, Idaho.

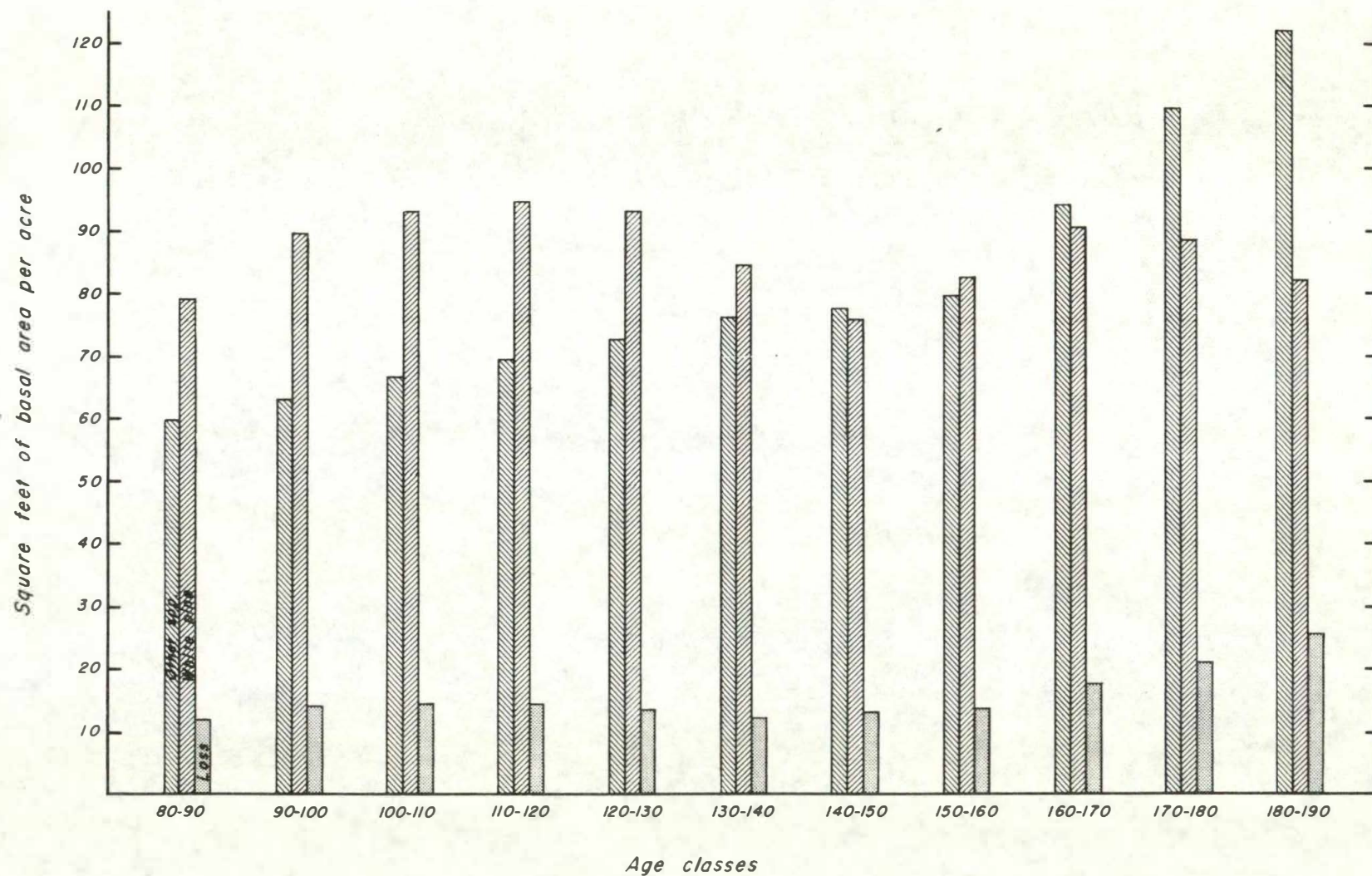
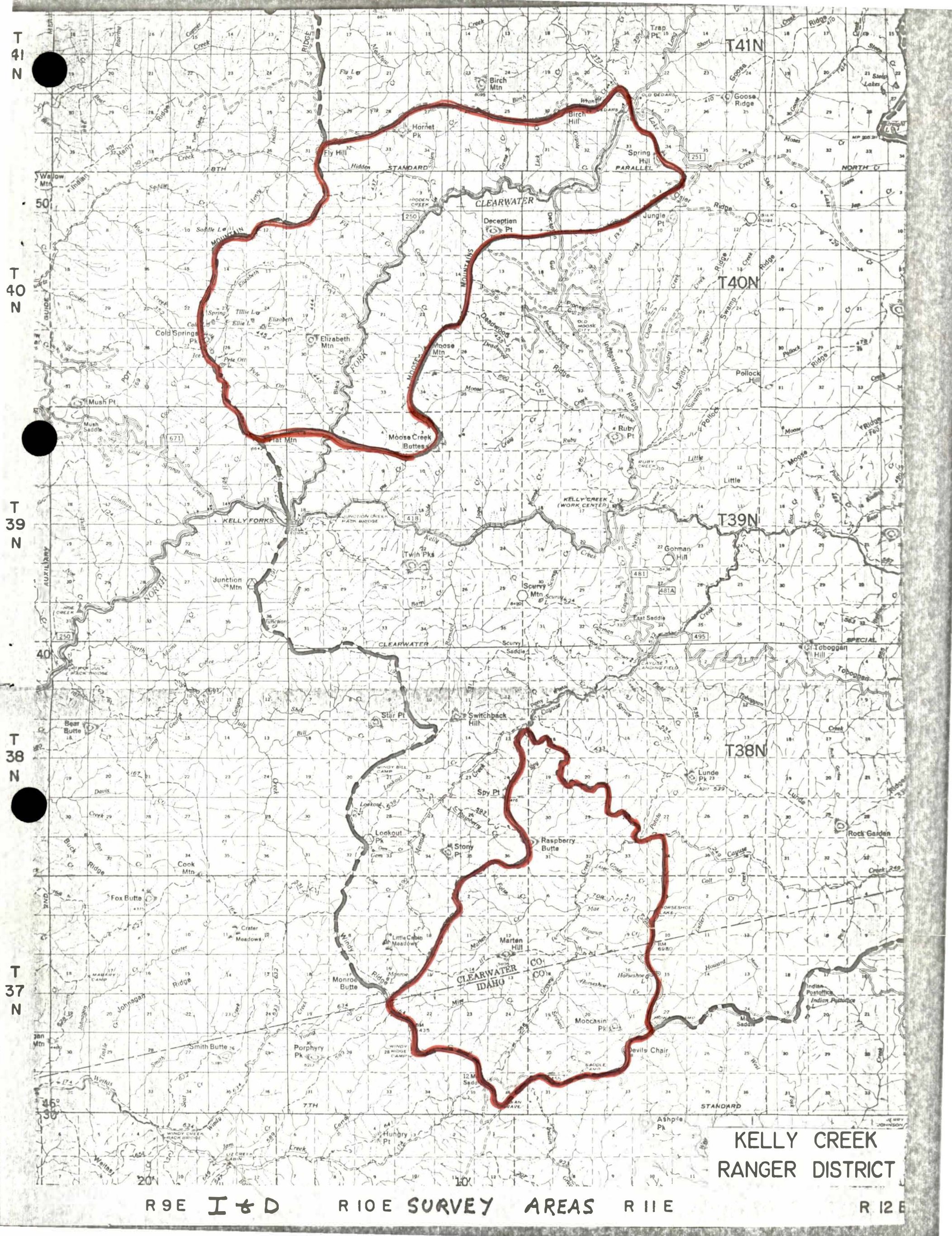
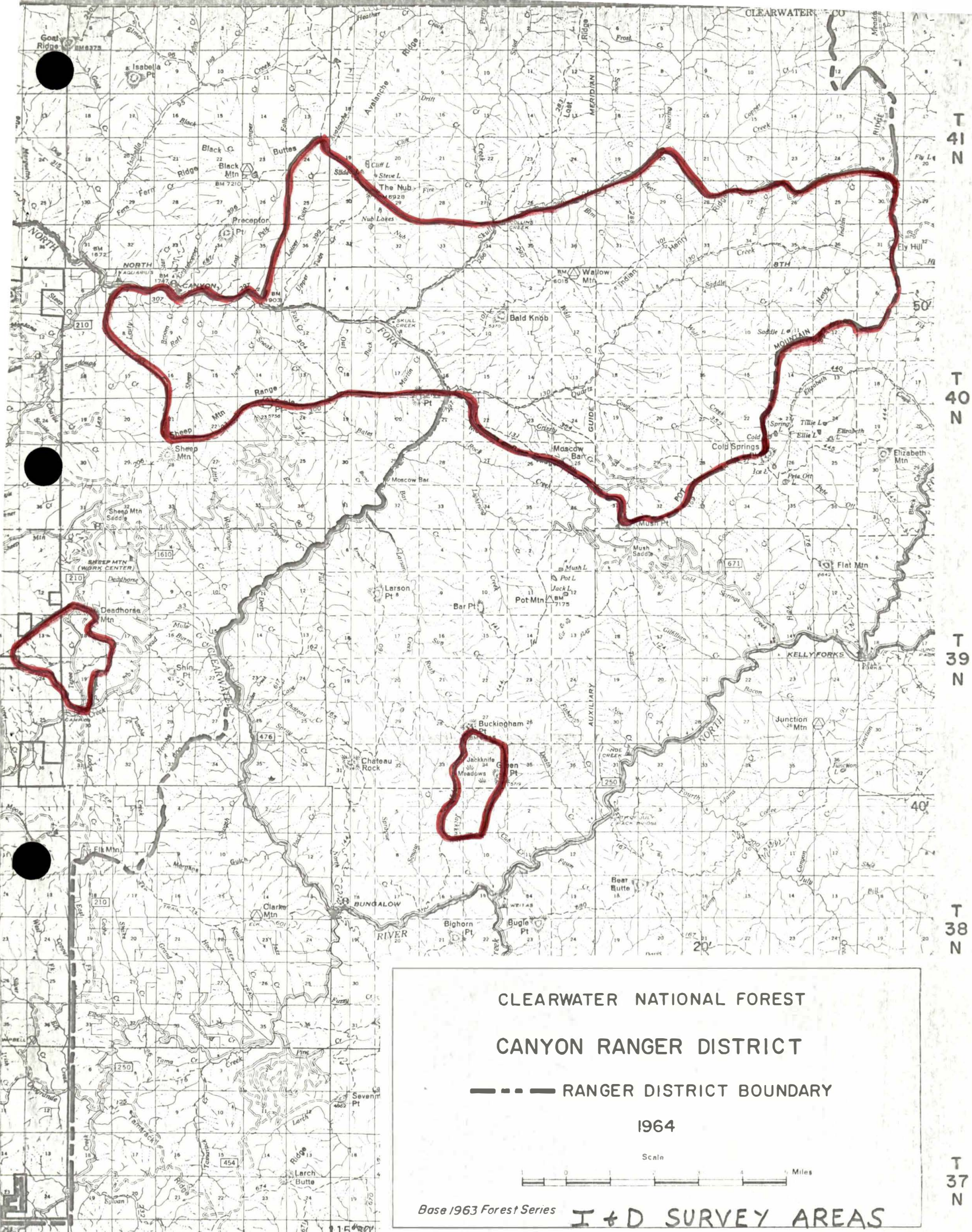


Figure 1.-- Typical losses from mountain pine beetle in western white pine, the relation of white pine and other tree species by age classes.



KELLY CREEK
RANGER DISTRICT



CLEARWATER NATIONAL FOREST
CANYON RANGER DISTRICT

--- RANGER DISTRICT BOUNDARY

1964



Base 1963 Forest Series

I & D SURVEY AREAS

R 7 E

R 8 E

R 9 E

T 41 N

T 40 N

T 39 N

T 38 N

T 37 N

